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Chilamblyopinus piceus, a New Genus and Species of Amblyopinine (Coleoptera: Staphylinidae) from Southern Chile, with a Discussion of Amblyopinine Generic Relationships

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ABSTRACT: Taxonomic history of staphylinid beetles of the tribe Amblyopinini is discussed. *Chilamblyopinus piceus*, a distinctive new genus and species, is described and illustrations of diagnostic characters are provided. A key to currently recognized genera in the Amblyopinini is provided. A preliminary reevaluation of relationships among genera currently included in the Amblyopinini suggests that substantial changes in the classification may be required. *Myotyphlus*, which occurs in the Australian region, shares derived characters both with some members of the genus *Quedius*, which occur in the Australian region and with the amblyopinine genus *Edrabius*, which occurs in the Neotropics, as do all other amblyopinines. The monophyly of the lineage which includes these two genera is uncertain. Few characters other than structural reductions and association with mammalian hosts suggest that *Myotyphlus* and *Edrabius* are a part of a monophyletic lineage with other South American amblyopinines. In contrast, *Amblyopinodes*, *Amblyopinus*, *Chilamblyopinus*, and *Megamblyopinus* form a well supported monophyletic lineage of strictly South and Central American taxa. *Chilamblyopinus* appears to be the most basally derived. *Megamblyopinus* is a sister group to *Amblyopinodes* and *Amblyopinus*. *Amblyopinodes* is highly autapomorphic; however, *Amblyopinus* cannot be shown to be monophyletic, and may be a paraphyletic taxon in relation to *Amblyopinodes*. Additional characters and a more firmly established outgroup for the Amblyopinini as a whole are required for resolution of these problems.

Beetles of the tribe Amblyopinini are unique among staphylinids, and unusual among all Coleoptera, because of their apparently obligate association with small mammals. Adult amblyopinines are almost always collected from the fur of their mammalian hosts and, until recently, were believed to be obligate, blood-feeding ectoparasites (Seevers, 1955; Askew, 1971; Kim and Adler, 1985). Recently, we have shown that at least some members of the genus *Amblyopinus* are not ectoparasitic, but instead are predators on ectoparasites of their hosts (Ashe and Timm, 1987a, b). Habits of members of other genera are unknown; however, all amblyopinines are characterized by profound structural modifications, presumably in response to life in association with their mammalian hosts (see Seevers, 1955). The unusual structural and behavioral features of amblyopinines have resulted in a taxonomic history of the group characterized by considerable confusion. Opinions about both the taxonomic affinities of amblyopinines within the Staphylinidae and the genera which should be included as amblyopinines have varied substantially over the last 100 years.

Amblyopinine staphylinid beetles were first described and characterized by Solsky (1875) who recognized a single genus *Amblyopinus* based on two species,

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A. jelskii and *A. mniszechi.* He believed this genus to be a member of the "tribe" "Tachyporiens", and was intrigued by the account of Mr. C. Jelsky, the collector, regarding apparently obligate ectoparasitic relationships between members of *Amblyopinus* and mammals in the Peruvian Andes. Later, Matthews (1878) described a new species, *Amblyopinus jansoni,* from "the fur of a living Rat" (p. 275) in Tasmania. He believed that this species was correctly placed in the genus *Amblyopinus* as described by Solsky and felt that revision of the taxonomic position of the genus was warranted. The new species from Tasmania appeared to be much more closely related to *Philonthus* and *Quedius* (tribe Staphylinini) than to tachyporine staphylinids.

Fauvel (1883) noted that Solsky's *Amblyopinus* and Matthews' species from Tasmania were actually very different. Fauvel believed that *Amblyopinus* in the sense of Solsky was indeed a tachyporine near the genus *Habrocerus.* In contrast, the Tasmanian species was in the tribe Staphylinini near the genera *Quedius* and *Heterothops.* He therefore proposed the new generic name *Myotyphlus* for the Tasmanian species, *Amblyopinus jansoni* Matthews. Matthews (1884) felt that "the name proposed by M. Fauvel, '*Myotyphlus,*' Anglice, 'a blind mouse,' does not seem peculiarly applicable to a Coleopterous insect with distinct and serviceable eyes" (p. 87). Since Fauvel did not provide a generic description of *Myotyphlus,* Matthews proposed the generic name *Cryptommatus* for the Tasmanian *A. jansoni.* However, Fauvel's name *Myotyphlus* has priority based on the original species description and is the second of the currently recognized amblyopinine genera to be described, although it was not believed to be an amblyopinine at the time. In 1900 Fauvel described the genus *Edrabius* based on the species *E. philippianus* from specimens collected from *Ctenomys* in Chile. Fauvel apparently believed that *Edrabius* was closely related to *Amblyopinus.*

Little changed in the taxonomy of amblyopinines until 1944 when Seevers published the first of two important papers on the group (Seevers, 1944, 1955). Seevers (1944) did not describe any new genera; however, he did recognize that *Amblyopinus* and *Edrabius* were not correctly placed near *Habrocerus* (which was by that time placed in the subfamily Habrocerinae). He consequently suggested that these two genera occupy an isolated position within the Staphylinidae and proposed the subfamily Amblyopininae to contain them. He clearly intended the new subfamily to include both *Amblyopinus* and *Edrabius* but did not mention *Edrabius* in the subsequent treatment of the subfamily. He also did not include *Myotyphlus* among amblyopinines at that time.

In 1955 Seevers published a major revision of the amblyopinines in which he proposed that the group was closely related to the staphylinine tribe Quediini, from which he believed them to be separate based on their specialized ectoparasitic habits. In this revision he included both *Myotyphlus* and *Edrabius* together with *Amblyopinus* in the tribe Amblyopinini and described two new genera based on distinctive groups of species which previously had been placed in *Amblyopinus.* He included those species which were characterized by a highly derived head capsule and the presence of black, claviform setae on the sternites in the genus *Amblyopinodes* (type species *A. gahani* Fauvel). He included large species with more generalized head capsules in the genus *Megamblyopinus* (type species *A. mniszechi* Solsky).

There has been no substantial modification to the generic level classification of

the Amblyopinini since Seevers' (1955) revision. Although numerous new species have been described, no undescribed genera have been discovered. Thus, the discovery of a morphologically distinctive new genus-level taxon is particularly exciting. Our studies, which were prompted by the discovery of this new genus, required a reexamination of generic level taxa of the Amblyopinini and their relationships. Though this investigation is still in an early stage, the preliminary results suggest that substantial modification to the genus-level classification of amblyopinines may ultimately be required.

In this paper we describe a new genus and species of amblyopinine staphylinid from Chile, provide a key for distinguishing the currently recognized genera of the Amblyopinini, and outline the preliminary results of our studies on the relationships among amblyopinine genera.

Key to the Genera of the Tribe Amblyopinini

Herein we present a key to all known genera of the tribe Amblyopinini. Some characters used in this key have been used previously in keys to genera of the Amblyopinini (Seevers, 1955; Machado-Allison, 1963; Coiffait and Saiz, 1968). However, reexamination of members of all genera, and discovery of the new genus described here, have led to reevaluation of previously used characters and discovery of new characters for more reliable separation of genera.

1. Eyes minute, single faceted, located immediately posterior to antennal fossae and distant from basal angles of head; gular sutures subparallel for most of their lengths (see Seevers, 1955, fig. 32a, c) 2
– Eyes larger, multifaceted, distant from antennal fossae and located immediately anterior to basal angles of head; gular sutures subparallel only medially and broadly divergent both anteriorly and posteriorly (see Seevers, 1955, fig. 32b, d, e) 3
2. Tarsomere I of mesothoracic legs with distinct comb of short, dark spines extending almost entire length of article; lateral plates of abdominal segment IX with scattered unmodified macrosetae; Australia and Tasmania ..... *Myotyphlus* Fauvel
– Tarsomere I of mesothoracic legs without comb of short, dark spines; each lateral plate of abdominal segment IX with apical patch of extremely long aciculate setae in addition to scattered unmodified macrosetae; South America ..... *Edrabius* Fauvel
3. Large, 13 mm or greater in length; elytra as long as or longer than broad; hind coxae relatively generalized, more or less triangular; labrum large, deeply bilobed, clearly visible from above 4
– Smaller, 11 mm or less in length; elytra broader than long; coxae more specialized, more or less oval or transverse, not triangular; labrum small, slightly bilobed, not, or at most only slightly, visible from above 5
4. Body more or less parallel sided; pronotum more or less parallel sided, apex only slightly narrower than base; anterior tibia broadly dilated and flattened distally with distinct lateral spines; pronotum with only numerous small asetose punctures (except for marginal macrosetose pores); abdominal terga with 1–3 marginal macrosetae .... *Megamblyopinus* Seevers

– Body fusiform, broadest at base of pronotum and elytra (Fig. 1); pronotum distinctly broader at base than apex; anterior tibia not distinctly dilated and flattened distally, without distinct lateral spines; pronotum with two distinct, more or less uniformly distributed, puncture types, consisting of larger punctures containing small to moderate macrosetae, and much more numerous and smaller asetose punctures; abdominal terga with numerous macrosetae laterally on both the disc and the margins ..... *Chilamblyopinus,* new genus

5. Abdominal sterna III–V, or III–VI, with marginal black claviform setae; clypeus markedly deflexed, labrum not visible from above .... *Amblyopinodes* Seevers

– Abdominal sterna without marginal black claviform setae; clypeus not or at most slightly deflexed, labrum slightly visible from above .... *Amblyopinus* Solsky

Chilamblyopinus, new genus

DIAGNOSIS: The genus *Chilamblyopinus* can be distinguished from all other genera in the Amblyopinini by the combination of: body shape broadest near base of pronotum and elytra, with relatively small head and tapering abdomen; known species uniformly dark, reddish brown to piceus; large size, 13–15 mm; relatively generalized head with only slightly developed postero-lateral angles; relatively long temporal region with broadly rounded basal angles; clypeus not deflexed; labrum large, bilobed, and visible from above; eyes visible from above, multifaceted, and distant from the antennal fossae; pronotum broad, convex in cross section, with apex narrower than base; pronotal punctures of two types, sparse large punctures bearing macrosetae, and more numerous asetose smaller punctures; each elytron about as long as broad, with three lateral macrosetae and two discal macrosetae on each elytron; middle and hind tarsi long and slender, without dense spongiform pilosity ventrally on one or more tarsomeres; and, abdominal terga with numerous large erect to suberect macrosetae laterally on both the disc and margins.

DESCRIPTION: Large, length of known species approximately 13–15 mm. Color of known species dark reddish brown to piceus. Body shape broad and more or less fusiform, broadest at base of pronotum and elytra; sides of abdomen converging to a more or less acute apex. Body, except for head and pronotum, densely covered with fine, recumbent microsetae; macrosetae large and conspicuous, especially on abdominal sclerites (Fig. 1).

Head: Head capsule relatively generalized (Fig. 2), small in relation to size of pronotum; base of head about 0.6 times greatest width of pronotum; posterior angle of head behind eyes distinct but not markedly developed; temporal region long, about as long as distance from hind margin of eye to antennal insertion, broadly rounded posteriorly. Neck opening about 0.5 maximum distance across tempora. Eyes visible from above, of about 20–30 facets, separated from antennal fossae about two times the width of the eyes. Vertex of head of known species with pair of minute callosities between eyes, distance between callosities about equal to distance of each from interior margin of eyes. Clypeus not deflexed. Gula long and broad, sutures distinct, broadly separated and more or less parallel medially and broadly divergent anteriorly and posteriorly; apical margin of gula

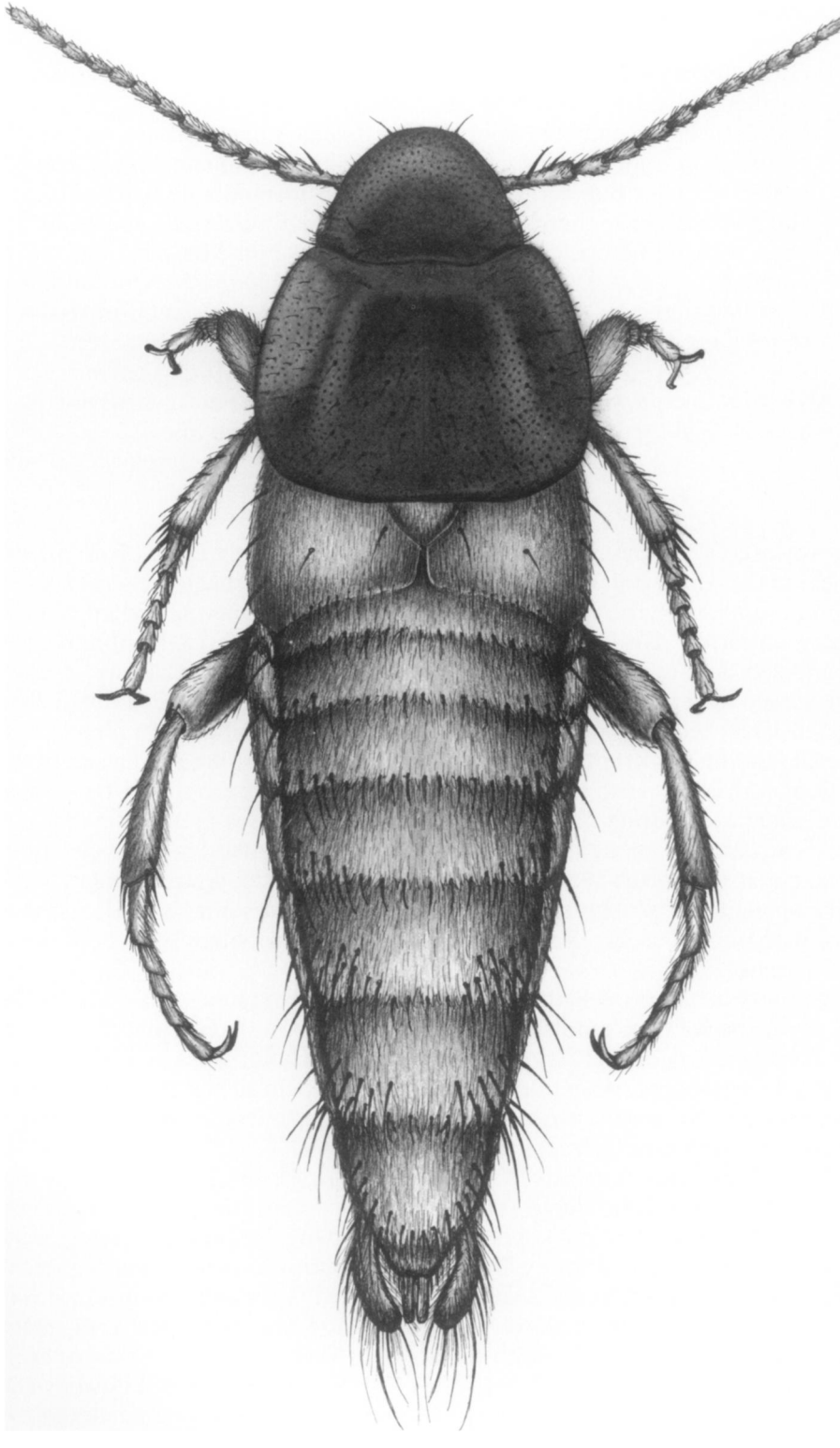
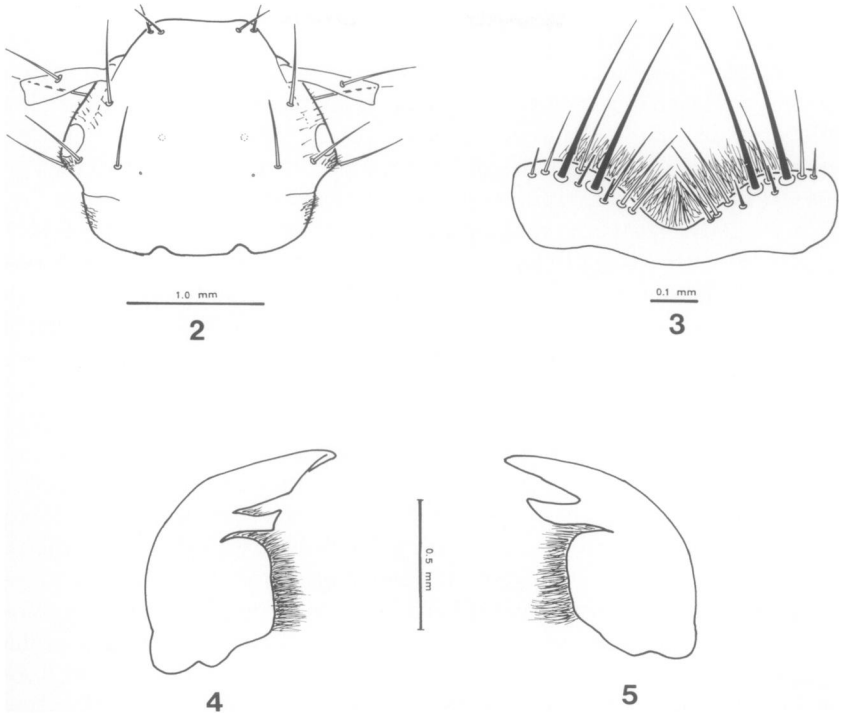


Fig. 1. *Chilamblyopinus piceus* Ashe and Timm, habitus.



Figs. 2–5. *Chilamblyopinus piceus* Ashe and Timm. 2. Head, dorsal aspect. 3. Labrum, dorsal aspect. 4. Left mandible, dorsal aspect. 5. Right mandible, dorsal aspect.

with pair of large macrosetae, distance between setal bases at least 6.0 times width of setal punctures. Punctures of dorsal surface of head numerous, asetose, moderately large and uniformly distributed, in addition to large punctures associated with macrosetae.

Mouthparts: Labrum present, relatively large, visible from above, distinctly bilobed; dorsal surface with two large, dark, anteriorly directed setae and a number of smaller setae in each half (Fig. 3); densely pubescent ventrally with numerous ventral setae extending beyond apical margin of labrum. Mandibles (Figs. 4, 5) large, bidentate with distinct apical tooth and large, prominent preapical tooth; more or less asymmetrical; right mandible with apical tooth slender, uniformly tapered and acutely pointed, and preapical tooth acutely pointed; left mandible with apical tooth broader and more oblique, and preapical tooth obliquely truncate. Maxilla characteristic of tribe (see Seevers, 1944, fig. 12). Labium characteristic of tribe (see Costa Lima, 1936, fig. 4).

Thorax: Pronotum broad, about 1.3 times as wide as length at midline; broadly convex in dorsal outline; anterior angles depressed; greatest width about one-third of distance from base; anterior margin about 0.7 times greatest width of pronotum, broadly emarginate around base of head; anterior apical angles rounded; posterior lateral angles rounded; basal margin very broadly rounded to almost straight; marginal bead only on anterior two-thirds of pronotum of known species. Pronotal punctures of two distinct types; large, distant and relatively uniformly distributed punctures which bear small to moderate macrosetae, and numerous, much smaller

punctures without setae which are uniformly distributed among the larger punctures. Each elytron about as long as broad; densely covered with fine recumbent microsetae; lateral margin of each elytron of known species with three more or less equally spaced, large macrosetae; disc of each elytron with a small medial macroseta and a small macroseta near the scutellum; postero-lateral angles of elytra obliquely truncate. Metasternum short, very broad; more than twice as wide as distance from mesocoxal cavities to apex; apical margin emarginate, the lobes broadly rounded. Legs relatively long and slender; anterior tarsomeres I–III broad, short, with a dense spongiform pubescent pad ventrally; middle and posterior tarsi long and slender, tarsomeres without spongiform pads.

Abdomen: Abdominal sclerites with dense recumbent microsetae; each tergum with numerous prominent erect to suberect discal and marginal macrosetae on lateral one-third or more.

Secondary sexual characteristics: Typical of tribe (see species description).

TYPE SPECIES: *Chilamblyopinus piceus,* new species, here designated.

DISTRIBUTION: Presently known only from the range of the type species.

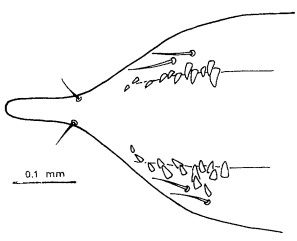
ETYMOLOGY: The genus name *Chilamblyopinus* is a combination of the country name "Chile" and the name "amblyopinus", which has been previously used as the generic base name for other genera in the tribe. They are combined to indicate the geographic region from which this unique amblyopinine was discovered.

DISCUSSION: *Chilamblyopinus* is one of the most distinctive genera in the tribe Amblyopinini. The large size of members of this genus could suggest similarity with *Megamblyopinus.* However, the broad fusiform body, dark coloration, distinctive pronotal structure and punctation, the slightly shorter elytra, and the large number of macrosetae on the abdominal sclerites, clearly distinguishes *Chilamblyopinus* from *Megamblyopinus.* Presently, only a single species is included in *Chilamblyopinus.* If other species are discovered, the generic characterization provided here may require modification.

Chilamblyopinus ***piceus,*** new species
(Figs. 1–9)

DESCRIPTION: Length 13–15 mm. Body color uniformly dark reddish brown to piceus (Fig. 1).

Head with numerous moderately large and uniformly distributed punctures; distance between punctures about equal to width of punctures; integument between punctures smooth and shining, without microsculpture except for obsolete transverse to reticulate microsculpture laterally near eyes. Ventral surface of head with dense and distinct reticulate to transverse microsculpture. Head without microsetae except for scattered microsetae laterally near eyes. Antenna long, extending to near middle of elytra; antennomere I about 1.7 times as long as II and III together; antennomeres IV through XI longer than broad, more or less equal in length, and markedly flattened laterally. Pronotum with larger macrosetose punctures more or less uniformly and distantly distributed, though slightly more dense in antero-lateral third; setae in postero-lateral third slightly larger than others; smaller asetose punctures moderately dense and uniformly distributed, average distance between asetose punctures about three to four times the width of the punctures; integument between punctures with dense reticulate microsculpture; pronotum with very fine medio-longitudinal impunctate line extending length



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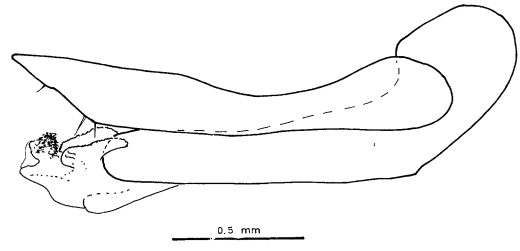

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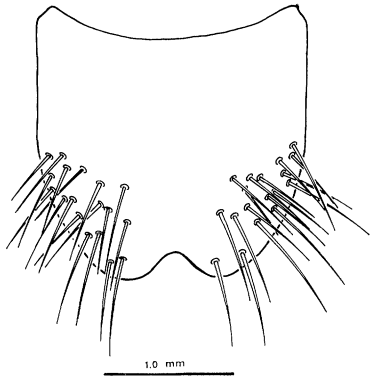

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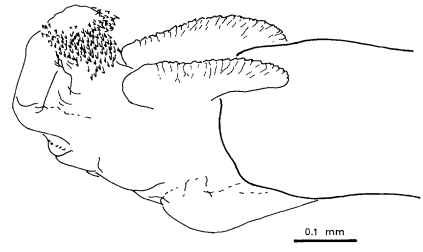

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Figs. 6–9. *Chilamblyopinus piceus* Ashe and Timm. 6. Paramere of aedeagus, ventral aspect of apex. 7. Aedaegus, lateral aspect. 8. Male sternum VIII. 9. Aedeagus, detail of lateral aspect.

of pronotum in most specimens, and small impunctate area on each side of midline about 0.4 of distance from anterior edge; pronotum without microsetae; margin with fine bead from anterior angles to about one-third distance from base; posterolateral third, posterior angles, and base without marginal bead. Anterior tibia relatively long and slender, without distinct spines; middle tibia with numerous long dark spines and two especially prominent dark spines on anterior apex; posterior tibia with distinct spines, especially around apex. Middle tarsus slender, about as long as tibia; tarsomere I about as long as II and III together. Hind tarsus slender, about as long as tibia; tarsomere I longer than II and III together. Integument of abdominal sclerites with distinct transverse microsculpture.

Secondary sexual characteristics: Sternum VIII of male deeply emarginate, with 12–15 long suberect macrosetae on each apico-lateral half (Fig. 8). Sternum VIII of female unmodified.

Aedeagus: As in Figs. 6, 7, 9.

TYPE MATERIAL: Holotype, male, with labels as follows: Chile: Osorno Prov.; Valle de La Picada, 17 February–4 March 1984, coll. Bruce D. Patterson, ex. *Rhyncholestes raphanurus*; Holotype, *Chilamblyopinus piceus,* new species, designated J. S. Ashe and R. M. Timm, 1987. Deposited in the collection of the Field Museum of Natural History, Chicago, Illinois.

PARATYPES: One male, same data as type; one female, same locality and col-

lector, 14 April 1984, ex. *Akodon olivaceus.* Deposited in the collection of the Field Museum of Natural History, Chicago, Illinois.

DISTRIBUTION: All specimens are known from a single valley in Osorno Province in southern Chile. Specimens have been collected between 17 February and 14 April.

HOST RELATIONSHIPS: Two males have been collected from the caenolestid marsupial *Rhyncholestes raphanurus,* and a single female from the cricetid rodent *Akodon olivaceus.* These disparate host records provide little insight into the normal patterns of host relationships of these beetles. Our experience with other amblyopinines suggests that these beetles usually show greater host specificity than many literature records would indicate. Therefore, one or both of the host records reported herein may not represent a typical host for this species.

ETYMOLOGY: The name "piceus" is chosen to indicate the dark, piceus color of most specimens (from *piceus,* Latin, meaning pitchy, or pitch-black).

REMARKS: Only three specimens of this species are known, two males from *Rhyncholestes raphanurus* and one female from *Akodon olivaceus.* The specimen from *Akodon* is considerably lighter in color, more reddish brown, than the dark, piceus males from *Rhyncholestes.* We have not found other differences which indicate that these might represent different species. The disparate hosts suggest that this possibility should be considered; however, all specimens are from the same valley and are structurally similar. Therefore, we accept all three specimens as conspecific.

Discussion

The discovery of a new genus of amblyopinine staphylinid beetle associated with mammals is remarkable. Because of the association of these beetles with mammals, they have received relatively more attention than most staphylinids and were believed to be well known, at least at the generic level. Discovery of *Chilamblyopinus* provides an opportunity to reevaluate what is known about the evolution and structure of these beetles. Wenzel and Tipton (1966) provided the most recent discussion of the relationships among amblyopinine genera. This was primarily a summary of the discussion provided by Seevers (1955).

Seevers (1955) commented on the confusion caused by the presence of *Myotyphlus,* which he believed to be the most generalized amblyopinine, on "rats" in Tasmania. All other genera occur in South and Central America. He recognized that there are two morphologically distinct lineages within the tribe. He believed one lineage to include both *Myotyphlus* of Tasmania and *Edrabius* of South America. The other lineage included *Amblyopinodes, Amblyopinus,* and *Megamblyopinus,* all of which occur in South and Central America. Seevers (1955) believed that all were related to the tribe Quediini, and that *Myotyphlus* and *Edrabius* retained more features of their quediine ancestors than other amblyopinines. However, both of these genera appeared highly specialized in reduction of the eyes to a single facet. The geographical distance between members of these genera, as well as the apparently disparate host relationships (*Myotyphlus* on "rats" and *Edrabius* on *Ctenomys*) caused Seevers to postulate that this lineage shared ancestors which originally had a Holarctic distribution. In contrast, he believed the second lineage, which included all other genera, originated on North American hystricomorphs from an ancestral stock which did not resemble *Edrabius* very

closely. At the time Seevers proposed this scenario, biogeographers believed that the hystricomorph rodents originated in the Northern Hemisphere. This biogeographic hypothesis is not currently accepted.

The first to suggest that a northern origin of the Amblyopinini was incorrect was Machado-Allison (1963), who also accepted the relationship between *Edrabius* and *Myotyphlus*. He believed that the tribe originated in the Southern Hemisphere and "probably penetrated by the Southern Hemisphere, possibly by way of Antarctica" (p. 414).

Examination of members of all genera in the Amblyopinini suggests that some of the original assumptions about the strictly monophyletic nature of the tribe Amblyopinini should be reexamined. In particular, the relationships between *Edrabius* and *Myotyphlus* and the relationship of each of these to other amblyopinines is problematic. *Myotyphlus* remains the most enigmatic genus. Its distribution in the Australian region and its association with members of the genus *Rattus* (Ashe and Timm, unpubl. data) implies a long period of isolation from other amblyopinines. In addition, at least one structural feature suggests a closer relationship between *Myotyphlus* and some Australian quediine staphylinids than with other amblyopinines. The first mesotarsal article of both *Myotyphlus* and Australian quediines such as *Quedius bellus* Lea, *Quedius cordatus* Lea, and others, is distinctive for the presence of a longitudinal comb of closely packed blackish spines (see Lea, 1925 for distribution of the character among quediines). To our knowledge quediine staphylinids having this characteristic tarsal comb are primarily restricted to the Australian region. However, one genus, *Ctendropus,* has representatives which exhibit this feature in Southeast Asia (A. F. Newton, Jr., pers. comm.). If this character is indeed a synapomorphy between *Myotyphlus* and these quediines, then it implies that *Myotyphlus* is not part of a monophyletic lineage with the South American amblyopinines. If true, then the association with mammals must have arisen at least twice, and those characteristics which *Myotyphlus* shares with other amblyopinines, especially *Edrabius*, must have arisen in parallel. However, *Myotyphlus* and *Edrabius* share a number of derived characteristics which they do not share with other amblyopinines. These include: eye reduced to a single facet and located anterior on the head near the antennal insertion; similarity of the shape of the head; and tridentate mandibles. Based on these characteristics, a possible relationship between *Myotyphlus* and *Edrabius* cannot be rejected. In addition, if these two genera form a monophyletic lineage, then the ancestor of *Edrabius* must have lost the tarsal comb. If the two genera are closely related, then the biogeography and origin of present distribution among available hosts appears enigmatic.

We are able to find few characters, other than structural reductions, and apparently obligate association with mammalian hosts, which suggest that *Myotyphlus* and *Edrabius* are part of a monophyletic lineage with other South American amblyopinines. In contrast, *Amblyopinodes, Amblyopinus, Chilamblyopinus,* and *Megamblyopinus* form a well-supported monophyletic lineage of strictly South and Central American taxa. Most remarkable among characters shared among these genera are similarities in head structure, position and form of the eyes, and form of the mandibles (see Seevers, 1955). Uncertainty about the relationships of these genera to quediine taxa makes it difficult to choose an outgroup for analysis of character distributions. However, if quediines as a group are treated

as an outgroup, then a tentative pattern of relationships between these four genera can be suggested. *Chilamblyopinus* appears to be the most basally derived lineage and has a number of primitive characteristics including the relatively generalized head, discal setae on the prothorax and elytra, and numerous setae on the abdominal segments (see above for details). The broad fusiform body shape clearly separates this genus from the other three genera and could be an autapomorphy for this lineage.

Amblyopinodes, Amblyopinus, and *Megamblyopinus* are clearly closely related genera based on the shared presence of similarly reduced setal patterns, as well as other features (see Seevers, 1955). Among these, *Megamblyopinus* is the most generalized in head and coxal structure (see Seevers, 1955 for details). In fact, *Megamblyopinus* is difficult to separate from *Amblyopinus* on characteristics other than primitive characters or size. However, reexamination of the two species on which Seevers (1955) based the genus, *M. mniszechi* Solsky and *M. germaini* Fauvel, revealed a probable apomorphy suggesting the monophyly of this genus. Both species have the anterior tibia distally dilated and flattened. In addition, the lateral margin of this tibia has a row of widely dispersed spines, the most distal of which is conspicuously large. We have not observed similar tibiae among other amblyopinines of this lineage. *Amblyopinodes* and *Amblyopinus* are sister taxa. *Amblyopinodes* is clearly a monophyletic group based on a number of highly autapomorphic characteristics. These include the presence of black claviform setae on some abdominal sterna, the markedly deflexed clypeus, mandibles with relatively small teeth, distinctive head shape, and broadly oval posterior coxae. In contrast, we have not discovered shared apomorphies which indicate that *Amblyopinus* is monophyletic in relation to *Amblyopinodes.* This suggests that *Amblyopinus* could be paraphyletic in relation to *Amblyopinodes;* however, this would have to be demonstrated by showing that *Amblyopinodes* is more closely related to some species, or species group, presently included within *Amblyopinus* than to *Amblyopinus* as a whole.

The preliminary analysis of relationships among amblyopinine genera presented here does not provide a definitive statement about phylogenetic patterns within the Amblyopinini. Especially important among unresolved problems are the issues regarding the relationship of *Myotyphlus* to *Edrabius,* and the relationship of these two genera to the remainder of the amblyopinines. Additional character systems need to be developed, both within the amblyopinines and among other quediines. Until Southern Hemisphere quediines are better known, it will be impossible to choose appropriate outgroups for analysis of characters found among amblyopinines.

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